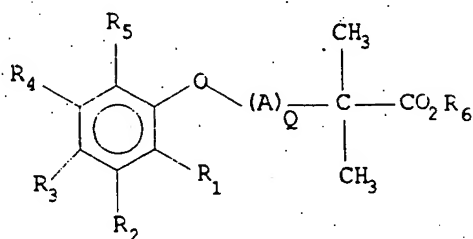


What is claimed is:

1. A method for inhibiting growth of a bacterium which consists essentially of contacting the bacterium with a compound having the structure:



wherein each of R_1 , R_2 , R_3 , R_4 , R_5 and R_6 comprises independently H, F, Cl, Br, I, -OH, -OR₇, -CN, -COR₇, -SR₇, -N(R₇)₂, -NR₇COR₈, -NO₂, -(CH₂)_pOR₇, -(CH₂)_pX(R₇)₂, -(CH₂)_pXR₇CO R₈, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein a linkage to the benzene ring may alternatively be -N-, -S-, -O- or -C-; wherein R₇ R₈ may be independently H, F, Cl, Br, I, -OH, -CN, -COH, -SH₂, -NH₂, -NHCOH, -(CH₂)_pOH, -(CH₂)_pX(CH₂), -(CH₂)_pXCOH, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein A may be -N₂-, -NH-, -C=C=CH₂-, -C≡C-C₂HOH-, -C≡C-CH₂-, -CH₂-CH₂-O-, -CH₂-CH₂-CH₂-O-, -S-, -S(=O)₂-, -C=O-, -C=O-O-, -NH-C=O-, -C=O-NH-; and wherein Q, p, N and X may independently be an integer from 1 to 10, or if Q is 1 A comprises a (C₁-C₁₀)-alkyl chain, (C₁-C₁₀)-alkenyl chain or (C₁-C₁₀)-alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O-

or -S- or -N-; or a pharmaceutically acceptable salt or ester thereof, which compound is present in a concentration effective to inhibit growth of the bacterium.

5

2. The method of claim 1, wherein A comprises an (C₁-C₁₀)-alkylene chain, (C₁-C₁₀)-alkyl chain, (C₁-C₁₀)-alkenyl chain or (C₁-C₁₀)-alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O- or -S- or -N-.

10

3. The method of claim 1, wherein

15

R₁ = R₄ = CH₃ or -OH,

R₂ = R₃ = R₅ = R₆ = H or -OH,

A = CH₂,

and Q = 3.

4. The method of claim 1, wherein

20

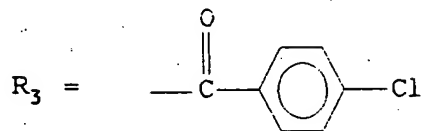
R₃ = Cl,

R₁ = R₂ = R₄ = R₅ = R₆ = H or -OH,

and Q = 0.

5. The method of claim 1, wherein

25



R₆ = CH(CH₃)₂,

30

R₁ = R₂ = R₄ = R₅ = H or -OH,

and Q = 0.

6. The method of claim 1, wherein

35

R₃ = Cl,

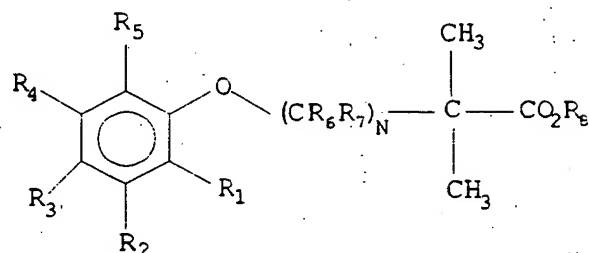
R₆ = C₂H₅,

R₁ = R₂ = R₄ = R₅ = H or -OH,

and Q = 0.

7. The method of claim 1, wherein the bacterium is
Legionella pneumophila, *Mycobacterium tuberculosis*,
Bacillus subtilis, *Bacillus Megaterium*, *Pseudomonas*
5 *Oleovorans*, *Alcaligenes eutrophus*, *Rhodococcus* sp.,
Citrobacter freundii, Group A *Streptococcus* sp., Coag
neg *Staphylococcus aureus* or *Nocardia* sp.
8. The method of claim 1, wherein the bacterium is
10 *Legionella pneumophila*.
9. The method of claim 1, wherein the bacterium is
Mycobacterium tuberculosis.
- 15 10. The method of claim 1, wherein the bacterium is in a
eukaryotic cell.
11. The method of claim 1, wherein the concentration of the
compound is from about 5 μ g/ml to about 100 μ g/ml.
- 20 12. The method of claim 1, wherein the concentration of the
compound is 20 μ g/ml.

13. A method for alleviating the symptoms of a bacterial infection in a subject which consists essentially of administering to the subject an amount of a compound having the structure:



wherein each of R_1 , R_2 , R_3 , R_4 , R_5 and R_6 may be independently H, F, Cl, Br, I, -OH, -OR₇, -CN, -COR₇, -SR₇, -N(R₇)₂, -NR₇COR₈, -NO₂, -(CH₂)_pOR₇, -(CH₂)_pX(R₇)₂, -(CH₂)_pXR₇COR₈, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein a linkage to the benzene ring may alternatively be -N-, -S-, -O- or -C-; wherein R₇ or R₈ may be independently H, F, Cl, Br, I, -OH, -CN, -COH, -SH₂, -NH₂, -NHCOH, -(CH₂)_pOH, -(CH₂)_pX(CH₂), -(CH₂)_pXCOH, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein A may be -N₂-, -NH-, -C=C=CH₂-, -C≡C-C₂HOH-, -C≡C-CH₂-, -CH₂-CH₂-O-, -CH₂-CH₂-CH₂-O-, -S-, -S(=O)₂-, -C=O-, -C=O-O-, -NH-C=O-, -C=O-NH-; and wherein Q, p, N and X may independently be an integer from 1 to 10, or if Q is 1 A may be a (C₁-C₁₀)-alkyl chain, (C₁-C₁₀)-alkenyl chain or (C₁-C₁₀)-alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O-

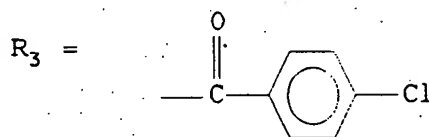
or -S- or -N-; or a pharmaceutically acceptable salt or ester thereof, which compound is present in a concentration effective to inhibit bacterial growth and thus alleviate the symptoms of the bacterial infection in the subject.

14. The method of claim 13, wherein A comprises an (C₁ - C₁₀)-alkylene chain, (C₁ - C₁₀)-alkyl chain, (C₁ - C₁₀)-alkenyl chain or (C₁ - C₁₀)-alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O- or -S- or -N-.

15. The method of claim 13, wherein
R₁ = R₄ = CH₃ or -OH,
R₂ = R₃ = R₅ = R₆ = H or -OH,
A = CH₂,
and Q = 3.

16. The method of claim 13, wherein
R₃ = Cl,
R₁ = R₂ = R₄ = R₅ = R₆ = H or -OH,
and Q = 0.

17. The method of claim 13, wherein



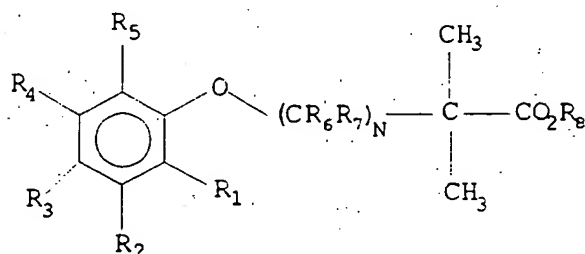
R₆ = CH(CH₃)₂,
R₁ = R₂ = R₄ = R₅ = H or -OH,
and Q = 0.

18. The method of claim 13, wherein
R₃ = Cl,
R₆ = C₂H₅,

$R_1 = R_2 = R_4 = R_5 = H$ or $-OH$,
and $Q = O$.

19. The method of claim 13, wherein the bacterial infection
5 is associated with *Legionella pneumophila*,
Mycobacterium tuberculosis, *Bacillus subtilis*, *Bacillus*
Megaterium, *Pseudomonas Oleovorans*, *Alcaligenes*
eutrophus, *Rhodococcus sp.*, *Citrobacter freundii*, Group
A *Streptococcus sp.*, Coag neg *Staphylococcus aureus* or
10 *Nocardia sp.*
20. The method of claim 13, wherein the bacterial infection
is associated with *Legionella pneumophila*.
- 15 21. The method of claim 13, wherein the bacterial infection
is associated with *Mycobacterium tuberculosis*.
22. The method of claim 13, wherein the subject is a human
or an animal.
- 20 23. The method of claim 13, wherein the bacterial infection
is associated with Leprosy, *Brucella* or *Salmonella*.
24. The method of claim 13, wherein the concentration of
25 the compound is from about 5 $\mu g/ml$ blood of the subject
to about 180 $\mu g/ml$ blood of the subject.
25. The method of claim 13, wherein the concentration of
the compound is 90 $\mu g/ml$ blood of the subject.
- 30 26. The method of claim 13, wherein the administration to
the subject is oral.

27. A method of inhibiting activity of Enoyl Reductase Enzyme in a cell which comprises contacting the cell with a compound having the structure:



wherein each of R_1 , R_2 , R_3 , R_4 , R_5 and R_6 may be independently H, F, Cl, Br, I, -OH, -OR₇, -CN, -COR₇, -SR₇, -N(R₇)₂, -NR₇, COR₈, -NO₂, -(CH₂)_p OR₇, -(CH₂)_p X(R₇)₂, -(CH₂)_p XR₇ COR₈, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein a linkage to the benzene ring may alternatively be -N-, -S-, -O- or -C-; wherein R₇ or R₈ may be independently H, F, Cl, Br, I, -OH, -CN, -COH, -SH₂, -NH₂, -NHCOH, -(CH₂)_p OH, -(CH₂)_p X(CH₂)_q, -(CH₂)_p XCOH, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein A may be -N₂-, -NH-, -C=C=CH₂-, -C≡C-C₂HOH-, -C≡C-CH₂-, -CH₂-CH₂-O-, -CH₂-CH₂-CH₂-O-, -S-, -S(=O)₂-, -C=O-, -C=O-O-, -NH-C=O-, -C=O-NH-; and wherein Q, p, N and X may independently be an integer from 1 to 10, or if Q is 1 A may be a (C₁-C₁₀)-alkyl chain, (C₁-C₁₀)-alkenyl chain or (C₁-C₁₀)-alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O- or -S- or -N-; or a pharmaceutically acceptable salt or

ester thereof, which compound is present in a concentration effective to inhibit activity of the enzyme.

5 28. The method of claim 27, wherein A comprises an (C_1 - C_{10})-alkylene chain, (C_1 - C_{10})-alkyl chain, (C_1 - C_{10})-alkenyl chain or (C_1 - C_{10})-alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O-
10 or -S- or -N-.

29. The method of claim 27, wherein

$$R_1 = R_4 = CH_3,$$

$$R_2 = R_3 = R_5 = R_6 = H \text{ or } -OH,$$

15 $A = CH_2,$

$$\text{and } Q = 3.$$

30. The method of claim 27, wherein

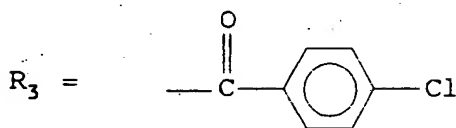
$$R_3 = Cl,$$

20 $R_1 = R_2 = R_4 = R_5 = R_6 = H \text{ or } -OH,$

$$\text{and } Q = 0.$$

31. The method of claim 27, wherein

25



$$R_6 = CH(CH_3)_2,$$

30 $R_1 = R_2 = R_4 = R_5 = H \text{ or } -OH,$

$$\text{and } Q = 0.$$

32. The method of claim 27, wherein

$$R_3 = Cl,$$

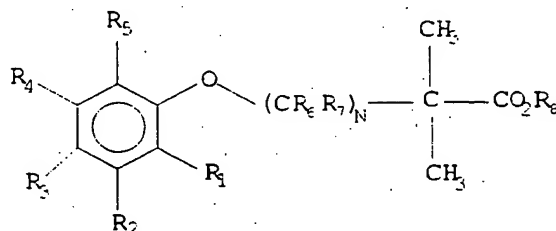
35 $R_6 = C_2H_5,$

$$R_1 = R_2 = R_4 = R_5 = H \text{ or } -OH,$$

$$\text{and } Q = 0.$$

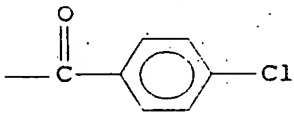
33. The method of claim 27, wherein the enzyme is in a bacterium.
34. The method of claim 33, wherein the bacterium is
5 *Legionella pneumophila*, *Mycobacterium tuberculosis*,
Bacillus subtilis, *Bacillus Megaterium*, *Pseudomonas*
Oleovorans, *Alcaligenes eutrophus*, *Rhodococcus sp.*,
Citrobacter freundii, Group A *Streptococcus sp.*, *Coag*
neg Staphylococcus aureus or *Nocardia sp.*
- 10 35. The method of claim 33, wherein the bacterium is
Legionella pneumophila.
36. The method of claim 33, wherein the bacterium is
15 *Mycobacterium tuberculosis*.
37. The method of claim 27, wherein the enzyme is in a cell.
- 20 38. The method of claim 37, wherein the cell is a mammalian cell.
39. The method of claim 27, wherein the concentration of the compound is from about 5 μ g/ml to about 100 μ g/ml.
- 25 40. The method of claim 27, wherein the concentration of the compound is 20 μ g/ml.

41. A method of altering a pathway of fatty acid synthesis in a bacterium which comprises contacting the bacterium with a compound having the structure



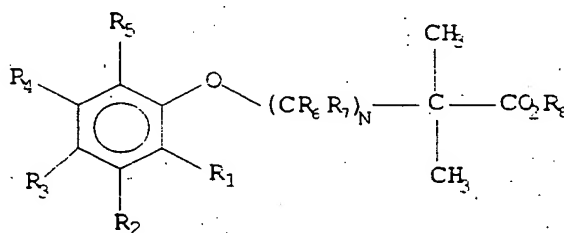
wherein each of R_1 , R_2 , R_3 , R_4 , R_5 and R_6 may be independently H, F, Cl, Br, I, -OH, -OR₇, -CN, -COR₇, -SR₇, -N(R₇)₂, -NR₇ COR₈, -NO₂, -(CH₂)_p OR₇, -(CH₂)_p X(R₇)₂, -(CH₂)_p XR₇ COR₈, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein a linkage to the benzene ring may alternatively be -N-, -S-, -O- or -C-; wherein R₇ or R₈ may be independently H, F, Cl, Br, I, -OH, -CN, -COH, -SH₂, -NH₂, -NHCOH, -(CH₂)_p OH, -(CH₂)_p X(CH₂)₂, -(CH₂)_p XCOH, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein A may be -N₂-, -NH-, -C=C=CH₂-, -C≡C-C₂HOH-, -C≡C-CH₂-, -CH₂-CH₂-O-, -CH₂-CH₂-CH₂-O-, -S-, -S(=O)₂-, -C=O-, -C=O-O-, -NH-C=O-, -C=O-NH-; and wherein Q, p, N and X may independently be an integer from 1 to 10, or if Q is 1 A may be a (C₁-C₁₀)-alkyl chain, (C₁-C₁₀)-alkenyl chain or (C₁-C₁₀)-alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O- or -S- or -N-; or a pharmaceutically acceptable salt or ester thereof, thus altering the pathway of fatty acid

synthesis.

42. The method of claim 41, wherein A comprises an (C₁-C₁₀)-alkylene chain, (C₁-C₁₀)-alkyl chain, (C₁-C₁₀)-alkenyl chain or (C₁-C₁₀)-alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O- or -S- or -N-.
43. The method of claim 41, wherein
R₁ = R₄ = CH₃ or -OH,
R₂ = R₃ = R₅ = R₆ = H or -OH,
A = CH₂,
and Q = 3.
44. The method of claim 41, wherein
R₃ = Cl,
R₁ = R₂ = R₄ = R₅ = R₆ = H or -OH,
and Q = 0.
45. The method of claim 41, wherein
- R₃ = 
- R₆ = CH(CH₃)₂,
R₁ = R₂ = R₄ = R₅ = H or -OH,
and Q = 0.
46. The method of claim 41, wherein the bacterium is *Legionella pneumophila*, *Mycobacterium tuberculosis*, *Bacillus subtilis*, *Bacillus Megaterium*, *Pseudomonas Oleovorans*, *Alcaligenes eutrophus*, *Rhodococcus sp.*, *Citrobacter freundii*, Group A *Streptococcus sp.*, *Coag neg Staphylococcus aureus* or *Nocardia sp.*

47. A method of inhibiting growth of a bacterium which consists essentially of contacting the bacteria with an enoyl reductase inhibitor so as to inhibit the reductase and thus inhibit the growth of the bacterium.

48. A method for determining whether or not a bacterium is sensitive to a compound having the structure:



wherein each of R_1 , R_2 , R_3 , R_4 , R_5 and R_6 may be independently H, F, Cl, Br, I, -OH, -OR₇, -CN, -COR₇, -SR₇, -N(R₇)₂, -NR₇, COR₈, -NO₂, -(CH₂)_p OR₇, -(CH₂)_p X(R₇)₂, -(CH₂)_p XR₇ COR₈, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein a linkage to the benzene ring may alternatively be -N-, -S-, -O- or -C-; wherein R₇ or R₈ may be independently H, F, Cl, Br, I, -OH, -CN, -COH, -SH₂, -NH₂, -NHCOH, -(CH₂)_p OH, -(CH₂)_p X(CH₂)₂, -(CH₂)_p XCOH, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein A may be -N₂-, -NH-, -C=C=CH₂-, -C≡C-C₂HOH-, -C≡C-CH₂-, -CH₂-CH₂-O-, -CH₂-CH₂-CH₂-O-, -S-, -S(=O)₂-, -C=O-, -C=O-O-, -NH-C=O-, -C=O-NH-; and wherein Q, p, N and X may independently be an integer from 1 to 10, or if Q is 1 A may be a (C₁-C₁₀)-alkyl chain, (C₁-C

10)-alkenyl chain or (C₁ -C₁₀)-alkynyl chain which is
 branched or unbranched, substituted or unsubstituted
 and can optionally be interrupted 1 to 3 times by -O-
 or -S- or -N-; or a pharmaceutically acceptable salt or
 5 ester thereof, which comprises contacting the bacterium
 with a concentration of the compound effective to
 inhibit growth of the bacterium if the bacterium is
 sensitive to the compound, thereby determining whether
 or not the bacterium is sensitive to the compound.

10 49. The method of claim 48, wherein A comprises an (C₁ -C₁₀)-alkylene chain, (C₁ -C₁₀)-alkyl chain, (C₁ -C₁₀)-
 alkenyl chain or (C₁ -C₁₀)-alkynyl chain which is
 branched or unbranched, substituted or unsubstituted
 15 and can optionally be interrupted 1 to 3 times by -O-
 or -S- or -N-.

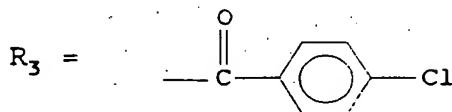
50. The method of claim 48, wherein

20 R₁ = R₄ = CH₃,
 R₂ = R₃ = R₅ = R₆ = H or -OH,
 A = CH₂ or -OH,
 and Q = 3.

51. The method of claim 48, wherein

25 R₃ = Cl,
 R₁ = R₂ = R₄ = R₅ = R₆ = H or -OH,
 and Q = 0.

52. The method of claim 48, wherein



35 R₆ = CH(CH₃)₂,
 R₁ = R₂ = R₄ = R₅ = H or -OH,
 and Q = 0.

53. The method of claim 48, wherein

$R_3 = Cl,$

$R_6 = C_2H_5,$

$R_1 = R_2 = R_4 = R_5 = H \text{ or } -OH,$

and $Q = O.$

54. The method of claim 48, wherein the bacterium is in a cell.

55. The method of claim 48, wherein the bacterium is selected from the group consisting of *Legionella pneumophila*, *Bacillus subtilis*, *Caulobacter crescentus*, *Citrobacter freundii*, *Nocardia sp.*, *Rhodobacter spheroides*, Group A *Streptococcus sp.*, Coag neg *Staphylococcus aureus* and *Mycobacterium tuberculosis*.

56. The method of claim 48, wherein the concentration of the compound is from about $5\mu g/ml$ to about $100\mu g/ml$.

57. The method of claim 48, wherein the concentration of the compound is $20 \mu g/ml$.

58. A method of selecting a compound which is capable of inhibiting the enzymatic activity of enoyl reductase which comprises:

(A) contacting enoyl reductase with the compound;

(B) measuring the enzymatic activity of the enoyl reductase of step (A) compared with the enzymatic activity of enoyl reductase in the absence of the compound, thereby selecting a compound which is capable of inhibiting the enzymatic activity of enoyl reductase.

59. The method of claim 58, wherein the compound contacts enoyl reductase at the site at which gemfibrozil

contacts enoyl reductase.